
REMARKS

This reply is fully responsive to the Office Action dated March 17, 2006, and is filed within three - (3) months following the mailing date of the Office Action. If needed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed. The method of payment and fees for petition fee due in connection therewith is enclosed.

10 **Disclosure/Claims Status Summary:**

The Examiner stated that Applicants' response filed on February 21, 2006 is acknowledged and that Claim 1 is pending and under consideration.

Claim Rejection Summary:

15 Claim 1 is pending in the application.

A. A rejection under 35 U.S.C. § 102(a) was withdrawn; and

B. Claim 1 was rejected under 35 U.S.C. § 102(b).

20 **A. Rejection under 35 U.S.C. § 102(a) was withdrawn**

In view of the Applicants' response, the rejection under 35 U.S.C. § 102(a) on page 3 of the prior rejection was withdrawn.

The Applicants note with appreciation the Examiner's withdrawal of the rejection under § 102(a).

B. Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Venkateswaran et al.

Regarding Claim 1, the Examiner maintained the rejection of Claim 1 under 35 U.S.C. § 102(b) for the reasons of record on page 2 of the final office action.

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The Examiner stated that the rejection was on the grounds that Venkateswaran et al. disclosed spore-formers isolated from a spacecraft that are of the genus *Bacillus*. Venkateswaran et al. disclosed that spores of the bacterial species exhibited resistance to UV, γ -radiation, (H₂O₂), and desiccation. The Examiner further stated that aside from the difference in the names of the above strains, it was unclear what the differences are between the *Bacillus nealsonii* sp. nov strain, which was isolated from a spacecraft assembly facility and the *Bacillus odysseyi* strain, which was isolated from a spacecraft assembly facility. The Examiner concluded that the organisms appear to be the same microorganisms by a different name.

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Despite the Applicants' assertion that *Bacillus nealsonii* is a very different bacterial species than that of *Bacillus odysseyi*, the Examiner maintained her rejection that the organisms appear to be the same microorganisms by a different name.

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The Applicant would like to first point out that the rejection under § 102(b) was improperly classified as a § 102(b) rejection. "Any invention described in a printed publication more than one year prior to the date of a patent application is prior art under Section 102(b), even if the printed publication was authored by the patent applicant." See M.P.E.P. 2133.02. Venkateswaran et al. was first published on July 5, 2002. The priority date of the present application is January 17, 2003. The non-provisional application was fully enabled by the provisional application (filed January 17, 2003) and therefore is afforded the effective filing date of the provisional application. Thus, the publication was published less than one year prior to the date of the patent application and should not be used for a rejection under § 102(b). Further, in a previous

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§ 1.131 declaration, the Applicants stated that they invented the invention at least as early at May 19, 2002, effectively swearing in front of the reference. For the Examiner's convenience, the 1.131 declaration is attached hereto. Because Venkateswaran et al. was published less than one year prior to the filing date, and because the Applicants have sworn behind the reference, the Applicants respectfully request that this rejection be withdrawn.

Additionally, the Applicants reassert that *Bacillus nealsonii* is a very different and distinct species than that of *Bacillus odisseyi*. Below, the Applicants identify several distinctions for the Examiner's benefit. Should the Examiner not understand the distinctions, the Examiner is encouraged to contact the Applicants (or their representatives) or a phylogenetic taxonomist who could clearly and concisely advise the Examiner to the fact that they are distinct species, particularly given what was disclosed in both the provisional and non-provisional applications. Several distinctions are as follows.

Each of the referenced species falls under a different RNA group. *Bacillus nealsonii* falls under RNA group 1 based on the 16S ribosomal RNA (16S rRNA) sequence, while *Bacillus odisseyi* falls under RNA group 2 based on the 16S ribosomal RNA sequence (See paragraph 74 of the Present Application). A single species cannot fall under both RNA group 1 AND RNA group 2, thus they are different species.

The referenced species do not have a genetic sequence that is similar enough to be classified as the same species. *Bacillus odisseyi* and *Bacillus nealsonii* are not similar to each other based on the 16S rRNA gene and having a homology of only about 95% sequence similarity among a 1,450 base pair genetic sequence of the 16S rRNA gene. It is customary, as known by one skilled in the art, that ~97.5% sequence similarity is necessary to make any two strains the same species. Because they have a similarity of approximately 95%, they are distinct species.

Each of the referenced species possesses a distinct morphology. FIG. 1 of Venkateswaran et al. and FIGS. 1-6 of the Present Application illustrate distinct differences between the morphologies of *Bacillus nealsonii* and *Bacillus odyseyi*. For example, FIG. 6 of the Present Application illustrates the exosporium of *Bacillus odyseyi* while *Bacillus nealsonii* does not possess such a trait. As shown in the figures, each species clearly possesses a different morphology and are therefore distinct species.

Each of the referenced species possesses a distinct phylogenetic tree. FIG. 3 of Venkateswaran et al. and FIG. 8 of the Present Application illustrate phylogenetic trees for each species. As illustrated in FIG. 8, *Bacillus nealsonii* is not even on the phylogenetic tree (as shown) for *Bacillus odyseyi*, clearly showing that they are genetically dissimilar. Because they each possess distinct phylogenetic trees, they are distinct species.

Each of the referenced species possesses a distinct phenotype. The phenotypic characteristics of *Bacillus nealsonii* are documented in Table 1 of Venkateswaran et al. while the phenotypic characteristics of *Bacillus odyseyi* are documented in FIG. 7 of the Present Application. The phenotypic differences clearly illustrate that the two species are in fact distinct species.

Finally, *Bacillus nealsonii* was described and published in the International Journal of Systematic and Evolutionary Microbiology in 2003, while *Bacillus odyseyi* was described and published in the International Journal of Systematic and Evolutionary Microbiology in 2004. Most importantly, unless they are different species, the same scientific journal will not accept novel descriptions of the two species.

As identified above, *Bacillus nealsonii* is a very different species than that of *Bacillus odyseyi*. Once again, should the Examiner not understand the distinctions, the Examiner is encouraged to contact a phylogenetic taxonomist who could advise the Examiner as to the clear fact that they are distinct species, particularly given the
5 phylogenetic trees of FIGS. 3 and 8 of Venkateswaran et al. and the Present Application respectively. Therefore, because they are distinct species, the Applicants respectfully request that this rejection of Claim 1 be withdrawn.

CONCLUSION

The Applicants respectfully submit that in light of the above remarks, all claims are now in allowable condition. The Applicants therefore respectfully request timely allowance of the pending claim.

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In the event the Examiner wishes to discuss any aspect of this response, or believes that a conversation with either Applicants or Applicants' representative would be beneficial, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

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The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to the attached credit card form. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed. The petition fee due in connection therewith may be charged to deposit account no. 50-2738 if a credit card form has not been included with this correspondence, or if the credit card could not be charged.

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Respectfully submitted,



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Attachments